

CLAIMS

What is claimed is:

1. A powder paint color changer adapted for use with a powder paint application device, comprising:

a hollow body portion having first and second ports, said first port adapted to be in fluid communication with a source of cleaning fluid and said second port adapted to be in fluid communication with the powder paint application device;

a plurality of change valves each having an outlet in fluid communication with an interior cavity of the hollow body portion and each having an inlet, whereby each change valve is operative in a first mode to enable fluid communication between said inlet and said outlet and operative in a second mode to prohibit fluid communication between said inlet and said outlet;

a plurality of purge valves corresponding to each of said plurality of change valves, each of said purge valves including an outlet in fluid communication with each inlet of said corresponding change valve and further including an inlet and a purge port, said purge port adapted to be in fluid communication with a source of cleaning fluid; and

a plurality of color valves corresponding to each of said plurality of purge valves, each of said color valves having an outlet in fluid communication with each inlet of said corresponding purge valve and having an inlet adapted to be in fluid communication with a source of powder paint.

2. The powder paint color changer of Claim 1, further comprising a check valve associated with each of said plurality of purge valves and coupled between said purge port of said purge valve and said source of cleaning fluid.

3. The powder paint color changer of Claim 1, wherein an interior surface of each of said plurality of purge valves includes a material characterized by a low coefficient of friction.

4. The powder paint color changer of Claim 1, wherein an interior surface of said hollow body portion includes a material characterized by a low coefficient of friction.

5. The powder paint color changer of Claim 3, wherein said material comprises a plastic.

6. The powder paint color changer of Claim 4, wherein said material comprises a plastic.

7. The powder paint color changer of Claim 5, wherein said plastic comprises polytetrafluorethylene.

8. The powder paint color changer of Claim 6, wherein said plastic comprises polytetrafluorethylene.

9. The powder paint color changer of Claim 3, wherein said interior surface is provided as a surface of a removable insert insertable within each purge valve.

10. The powder paint color changer of Claim 4 wherein said interior surface is provided as a surface of a removable insert insertable within the hollow body portion.

11. The powder paint color changer of Claim 10, wherein said second port of the hollow body portion comprises a hose barb extending from and integrally formed with said removable insert.

12. A powder paint color changer for use with a powder paint application device, comprising:

an elongate manifold having an interior cavity extending along a longitudinal axis thereof and including an inlet adapted to be in fluid communication with a source of cleaning fluid;

a pump operably interconnected with an outlet of said manifold and including an outlet port adapted to be in fluid communication with the powder application device and a conveying fluid inlet adapted to be in communication with a source of pressurized conveying fluid; and

a color change valve block operably interconnected to said manifold for selectively providing fluid communication between one of a plurality of powder paint sources and said manifold;

wherein a flow of conveying fluid through said pump provides a suction force through said manifold for drawing a volume of powder paint from one of said plurality of powder paint sources through said color change valve block

13. The powder paint color changer of Claim 12, wherein said color change valve block comprises:

a plurality of change valves each having an outlet in fluid communication with the interior cavity of said manifold and each having an inlet in fluid communication with a corresponding source of powder paint, whereby each change valve is operable to selectively enable fluid communication between said inlet and said outlet.

14. The powder paint color changer of Claim 13, wherein said color change valve block further comprises:

a plurality of purge valves, each corresponding to one of said plurality of change valves, each of said purge valves including an outlet in fluid communication with the inlet of said corresponding change valve and further including an inlet and a purge port, said purge port in fluid communication with a source of cleaning fluid; and

a plurality of color valves, each corresponding to one of said plurality of purge valves, each of said color valves having an outlet in fluid communication with the inlet of said corresponding purge valve and having an inlet in fluid communication with a source of powder paint, whereby each color valve is operable to selectively enable fluid communication between said corresponding purge valve and said source of powder paint.

15. The powder paint color changer of Claim 12, wherein said manifold further comprises a cleaner valve coupled to said manifold inlet and operable to selectively enable fluid communication between said manifold and said source of cleaning fluid.

16. The powder paint color changer of Claim 11, wherein an interior surface of said manifold interior cavity is comprised of a material having a low coefficient of friction.

17. A method of operating a powder paint applicator, comprising the steps of:

providing a powder paint color changer assembly for selectively supplying a particular powder paint to the powder paint applicator;

providing a pump in fluid communication with an outlet of said powder paint color changer and the powder paint applicator; and

selectively enabling a flow of conveying fluid through said pump for providing a suction force through said powder paint color changer assembly for drawing said particular powder paint through said powder paint color changer assembly and into said pump for further conveyance to the powder paint applicator by said conveying fluid.

18. The method of Claim 17, further comprising the steps of:

selectively disabling said flow of conveying fluid through said pump;

purging said powder paint color changer assembly, said pump and the powder paint applicator; and

selectively enabling said flow of conveying fluid through said pump for providing a suction force through said powder paint color changer assembly for drawing a powder paint through said powder paint color changer assembly and into said pump for further conveyance to the powder paint applicator by said conveying fluid.

19. The method of Claim 18, wherein said step of purging said powder paint color changer assembly, said pump and the powder paint applicator, further comprises the steps of:

- closing a source valve associated with a source of said particular powder paint;

- enabling a flow of cleaning fluid through a purge valve associated with said source valve, said cleaning fluid flowing through said powder paint color changer assembly, said pump and the powder paint applicator;

- closing an intermediate valve associated with said purge valve;

- opening a main cleaning valve associated with said powder paint color changer assembly for enabling a flow of cleaning fluid through, said powder paint color changer assembly, said pump and the powder paint applicator;

- closing said main cleaning valve; and

- opening an intermediate valve associated with a source of powder paint desired for a subsequent application.